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ABSTRACT

The former HEW (Health, Education, and Welfare) National Strategy for Youth Development Model proposed a community-based program to promote positive youth development and to prevent delinquency through a sequence of youth needs assessments, needs-targeted programs, and program impact evaluation. HEW Community Program Impact Scales data obtained from a census tract sample of over 6,000 youths, ages 12 to 19, were factor analyzed to assess their conformity to the behavioral model. For the most part, theoretical dimensions and their predicted correlational directions emerged as four factors provisionally named: (1) negative labeling; (2) social integration versus social estrangement; (3) norm adherence; and (4) parental rejection. Social alienation variables unexpectedly loaded three factors rather than one. The findings provide strong structural validation for the HEW Youth Development Model and Impact Scales. (Author/JAC)

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Factor Analysis of the HEW National Strategy for Youth Development Model's Community Program Impact Scales

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Running Head: Youth Impact Scale Factor Analysis

CG 016415

APA Convention, Washington, D. C. 8/23/82

Factor Analysis of the HEW National Strategy for Youth Development Model's Community Program Impact Scales

The former HEW National Strategy for Youth Development (NYSD) Model was created in the face of shrinking resources and rising delinquency rates. It proposed a community-based planning and procedural tool to promote positive youth development and prevent delinquency through a sequence of youth needs assessment, the development of youth needs targeted programs, and program impact evaluation (Elliott, Ageton, Hunter & Knowles, 1976). This operational procedure for data-based planning in community youth program development is unique in that it is predicated on a model of youth behavior and incorporates requisite measures of the model's components. Of the many NYSD assessment tools employed (a problems and needs frequency and seriousness checklist; Impact Scales; Knowledge of Agencies Questionnaire; and a demographic information section), the Impact Scales most directly reflect the behavioral model. Acceptable reliabilities (Brennan & Huizinga, 1975), substantial predictive validity (multiple $r \approx .70$) with respect to Self-Reported Delinquency (SRD) (Brennan & Huizinga, 1975 ; & Truckenmiller, 1982), and consistent correlational structural validity (Brennan & Huizinga, 1975; & Truckenmiller, 1979, Note 1, Note 2) have been found for the Impact Scales.

The behavioral model depicted in Figure 1 is one wherein mutually reinforcing components press toward and interact with positive youth development on the one hand, or delinquency on the other. In the positive

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Insert Figure 1 about here

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direction, a sense of general societal belonging, youth perceived access to desirable social roles, youth perceived positive labeling by significant others, and youth perceived positive peer group pressure are all synergistically reinforcing with positive, nonproblematic behavior. In the negative direction, alienation, perceived lack of access to desirable social roles, perceived negative labeling by significant others, and perceived negative peer group pressure are all mutually reinforcing with problematic and delinquent behavior.

Twelve Impact Scales measure these major components. The alienation component is tapped by the Impact Scales Normlessness vs. Conformity, Powerlessness vs. Control, and Societal Estrangement vs. Societal Integration. Youth perceived labeling by significant others is reflected by three Impact Scales: Negative vs. Positive Labeling by Parents, by Teachers, and by Peers. Another Impact Scale, Parental Rejection, might logically be grouped with the negative labeling scales. Impact Scales Perceived Access to Educational Roles and Perceived Access to Occupational Roles are measures of the perceived access to desirable social roles component. The three remaining Impact Scales are: Normative Peer Group Pressure (negative), Self-Esteem, and Self-Reported Delinquency (SRD). It is the structural construct validity of these Impact Scales which serves as the focus of this article.

Factor analysis has long been used as a method of structural analysis for examining dimensions of variance common to many diverse measures (Harman, 1967; Gorsuch, 1974). To the extent that separate measures are singularly associated with a factor in common, these measures are taken to be reflection of a more basic common dimension. There are many sorts of factor analyses, but most strategies involve an initial factor extraction followed by a transformation or rotation, the purpose of which is to explore for and/or test for a theoretically meaningful result. Rotations may be thought of as image enhancement techniques. If the requisite structure exists in the data, it can be found and enhanced. If the sought after structure is not in the data, then no amount of rotating will put it there.

Maximum likelihood (Joreskog, 1969; Lawley and Maxwell, 1971) factor analysis was selected for initial factor extraction. This is a later generation of factor analysis which statistically maximizes the likelihood that the results obtained from a sample will reflect those to be found in the population. Since the HEW Youth Development Model specifies that its various factors (social alienation, perceived negative labeling, etc.) are associated with one another, a rotational procedure was selected which both enhances the clarity of the factors via rotation to "simple structure" (Thurstone, 1935), and also allows the factors to be correlated, or oblique, if an oblique rotation will give the clearest picture of the factors. Direct quartimin oblique rotation for simple loadings (DQUART) was used for this purpose as recommended in the BMDP Manual (Dixon, 1981). Application of Cattell's Scree

Test (1966) for the proper number of factors to extract very clearly suggested the number of factors to retain for rotation.

The factor analytic strategy used in this study was employed to determine if Impact Scales purported to measure some common dimension would selectively fall on a common factor. The Negative Labeling scales should fall on only one common factor; the Role Access scales should fall on another factor; and the social alienation scales should fall on yet another. Theoretically then, at least three factors should emerge: Negative/Positive Labeling, Alienation vs. Societal Integration, and Role Access. If antisocial acts as measured by Self-Reported Delinquency (SRD) are equally related to these three factors, then SRD should equally load all three. If antisocial acts are differentially associated with one or two factors, then one should expect unequal SRD factor loadings. One might further examine the factor solutions regarding the relationships amongst delinquency, self-esteem, and the factors obtained.

Predictions can be made with respect to factor intercorrelations: Negative/Positive Labeling should correlate (-) with Role Access and (-) with Societal Integration vs. Alienation; and Role Access should correlate (+) with Societal Integration vs. Alienation.

Method

Subjects

The subjects were comprised of a 10% census tract representative samplings of 5,994 youths, mostly Caucasian, ages 12 - 19, from seven Pennsylvania counties of small city and rural environs. A form of cluster sampling was employed drawing classrooms of youth proportional

to the population of each grade across all schools in a target area. The youths were subjects of a Youth Needs Survey conducted by Pennsylvania Youth Services Systems in schools as part of a large pilot project studying rational needs based planning for youth services (Truckenmiller, Skok, & Lennon, 1978). One of the counties omitted the Negative Labeling by Peers scale, yielding a sample of 4,980 subjects for correlations between this and other scales.

Materials

The materials consisted of the Impact Scales administered as part of the Youth Needs Survey Questionnaire (Elliott et. al., 1976).

Procedure

Data Collection. Data had been collected by administration of self-report questionnaires to subjects in the public and some private schools. Confidentiality had been maintained by use of respondent identification numbers rather than names.

Data Analysis. An intercorrelation matrix of the 12 scales was computed. Using BMDP programs, the correlation matrix was subjected to a maximum likelihood factor analysis. The four substantive factors extracted, accounting for 53% of the common variance, were rotated to oblique simple structure via direct rotation for simple loadings.

Results

Table 1 shows the Unrotated Factor Loadings (Pattern) for Maximum Likelihood Canonical Factors accounting for 53% of the variance. Table 2 gives the Rotated Factor Loadings (Pattern) from Direct Quartimin Oblique Rotation of Maximum Likelihood Canonical Factors. Quartimin rotation to

oblique simple structure resulted in a redistribution of variance amongst the factors from 36.13%, 9.73%, 3.775% and 3.312% for respective Factors I, II, III and IV of the initial solution to 15.07%, 14.41%, 12.23% and 4.68% for the respective factors in the Quartimin rotation.

Table 3 provides the Sorted Rotated Factor Loadings (Pattern): Direct Quartimin Oblique Rotation of Maximum Likelihood Canonical Factors. Table 3 gives a "high contrast" picture of the Quartimin Oblique Rotation by replacement of loadings less than .2500 with zeros. In addition, the factor loading matrix has been rearranged so that the columns appear in decreasing order of variance explained by the factors. Table 4 gives the Factor Structure (Correlations of Factors with Variables) for the Quartimin Oblique Rotation. Table 5 shows the Factor correlations for Rotated Factors.

Insert Tables 1 through 5 about here

The Sorted Rotated Factor Loading (Pattern) of Table 3 wherein loadings less than .2500 have been replaced by zero shows the extent of model confirmation most clearly. Factor I, accounting for the greatest amount of variance in the Impact Scale correlation matrix is unequivocally a negative labeling factor. It is loaded appreciably only by the negative labeling scales. Factor II is appreciably loaded by role access variables, Perceived Access to Educational Roles and Perceived Access to Occupational Roles, as well as by Societal Estrangement (-), Self-Esteem, and Control vs. Powerlessness. That the role access variables load on a single factor is as predicted by the model. It can be seen from this factor, that

Self-Esteem is more related to perceived educational access variables, Societal Estrangement, and Control vs. Powerlessness, than to perceived negative labeling, or to Self-Reported Delinquency (SRD) of Factor III. Factor III seems very clearly a Self-Reported Delinquency factor in which SRD loads with Normative Peer Pressure and Normlessness. Factor IV, a relatively small factor, is specific to Parental Rejection and also minimally loads (-) Control vs. Powerlessness. Table 5, Factor Correlations for Correlated Factors, shows that all of the factors are correlated with one another. The direction and extent of these correlations will be taken up in the Discussion section.

Discussion

The factor analysis provides strong structural validation for the HEW Youth Development Model and Impact Scales. Provisionally, the factors obtained might be names: Factor I, "Negative Labeling" with positive salient loadings for Negative Labeling by Parents, by Teachers, and by Peers; Factor II, "Social Integration vs. Societal Estrangement", with salient loadings on Self-Esteem, Access to Occupational Roles, Access to Educational Roles, Control vs. Powerlessness, and a negative salient loading on Societal Estrangement; Factor III, "Norm Adherence", with negative salient loadings on SRD, Normative Peer Group Pressure, and Normlessness; and a minor Factor IV, "Parental Rejection", with a positive salient loading on Parental Rejection and a negative salient loading on Control vs. Powerlessness. The only major structural disconfirmation lies in the distribution of the HEW Social Alienation variables among three factors rather than panning out a single factor. That the Parental

Rejection Scale loaded a small isolated additional factor was also unexpected.

Factor I, "Negative Labeling" correlated -.48 with Factor II, "Social Integration vs. Social Estrangement"; -.69 with Factor III, "Norm Adherence",; and .13 with Factor IV, "Parental Rejection." Factor II, "Social Integration vs. Societal Estrangement", correlated .37 with Factor III, "Norm Adherence", and -.28 with Factor IV, "Parental Rejection". Factor IV, "Parental Rejection", correlated -.12 with Factor III, "Norm Adherence." All correlations are significant at a minimum of $p < .01$, 2 tail (See Table 5) and are in directions consistent with the HEW Youth Development Model.

The nature of the factors extracted and their intercorrelations are of practical as well as theoretical significance. The variables most associated with SRD loading Factor III are Normative Peer Group Pressure and Normlessness. If one is attempting to formulate programs for preventing delinquency, then it seems that one might best focus on the development of sound peer group relations and the fostering of adherence to positive social norms, generally speaking, and law abidance in particular. The high negative correlation between Factor III "Norm Adherence" and Factor I "Negative Labeling", suggests that programs might well also focus on ways to enhcance the sense of positive regard that youth encounter in dealing with parents, teachers, and peers. Rather striking here is the but modest +.37 correlation between Factor III,"Norm Adherence", and Factor II, "Social Integration vs. Societal Estrangement." In particular, there seems to

be little association between Access to Educational and Occupational Roles (Factor II) and SRD (Factor III). The programmatic implications are rather interesting. While educational and occupational programs, in and of themselves, may be associated with the self-esteem of youth, they may be expected to have little impact on delinquency levels for the population sample here.

The relationship between juvenile delinquency and learning disabilities has received considerable attention (Murray, 1976), Nardella,(Note 3) has reviewed a number of studies and found that, in general, a greater proportion of delinquent than nondelinquent youth show learning disabilities, broadly defined. The absolute percentages, though, decline with average and above average I.Q. levels. Poremba (1966), for example, reported that 50% of the delinquent youth referred to courts showed some specific learning disability. Critchley (1960) reported an even higher percentage (75%) of youth offenders in France to be non-readers. Duling, Eddy & Risko (1970) found that 53% of the Kennedy Youth Center population could be classified as learning disabled, though the percentage dropped to 32% for youth of average and above average I.Q. A study of 628 adjudicated delinquent boys and 968 nondelinquent boys drawn from Baltimore, Indianapolis, and Pheonix revealed 36.5% and 18.9% of delinquent vs. nondelinquent boys to be learning disabled (Campbell, 1978). Nardella (Note 3) concluded in his review that about 38% of juvenile delinquents not otherwise handicapped were found to be learning disabled (LD) compared to about 19% officially nondelinquent youth not otherwise handicapped. He concluded further that ability level is strongly related to adjudicated delinquency with 70% of low ability LD youth being adjudicated compared to 33% of high ability LD youth being adjudicated.

Special education programs have been found to reduce the incidence of antisocial acts (Zivan, Morton, et. al., 1966; Campbell, 1975), to name just two such studies. In the Campbell (1978) study, 55 to 65 hours of remediation produced marked improvements in academic performance and dramatic reductions in delinquent activity. It was noted that a minimum of 35 hours of remedial education was required before an effect could be seen. However, here too, social factors would seem to play a critical role in the conduct of successful LD educational programs. It is the opinion of this writer and many of his colleagues both at Loysville YDC and in the Pennsylvania educational/juvenile justice system (Skok & Truckenmiller, 1979) that learning disabilities can press toward delinquency through the medium of negative social labeling applied to the youths' poor achievement, frustration, and misbehavior, as well as to their search through delinquent acts for peer status and attention from adults. The obvious need for early LD diagnosis (Mauser, 1974) and provision of requisite special education might also best succeed in a positive social atmosphere. The possible alienating effects of an LD label have been the cause of some concern. McKay & Brumback (1980) for example, suggest that alienated LD children may reject social institutions and seek alternative, frequently delinquent activities. Thus, the counseling of youth in special education classes might be intensified to deal with possible feelings of inferiority and "mainstream" peer ostracisism that can accompany a youth's participation in sorely needed special education programs.

Relationship of present and previous findings.

The structural validation results of this study are especially notable in that the behavioral model here largely confirmed incorporates

a broad spectrum of molar factors previously identified in various theories and studies of youth adjustment and delinquency. The importance of negative labeling in relation to delinquency has been addressed by a number of other writers such as Erikson (1962) and Fisher (1972). It would certainly seem that the press of labeling towards label role enactment with respect to juvenile delinquency parallels the press of mental illness labels described by Rosenhan (1973). The heavy influence of peer group pressure has been attested to since Sutherland (1939). More recently, a combination of factors including social alienation, fear of physical harm, and pressure towards gang membership has been found an especially potent force pressing towards delinquency (Miller, 1975; Savitz et. al., 1977). Perceived blockage of access to educational and occupational roles has been cited as highly associated with delinquency for inner city minority groups (Vocational Foundation Inc., 1978; Caplan, 1974). However, McCandless, Boyd, et. al. (1972), like the present investigator, has found only modest support for the hypothesis that perception of role access blockage is accompanied by high admitted delinquency. McCandless, Boyd et. al., (1972) found least support for the role access blockage hypothesis with Caucasians. Even so, previous Impact Scale correlational analyses based on responses of the Pennsylvania Youth Services Systems normative sample,(small city and rural youth), suggest that economics rather than ethnic group membership may be the critical variable moderating the impact of role access blockage (Truckenmiller, 1978). Examination of separate correlation matrices obtained for Blacks, Hispanics, and Caucasians consistently showed Impact

Scales Normlessness; Negative Labeling by Parents, Teachers, and Peers; and Normative Peer Group Pressure to be most highly associated with SRD while role access variables showed but minimal SRD association. With respect to predicting SRD from demographics, Fink & Truckenmiller (Note 4) found something of poverty threshold effect for one small city normative sample of 1689 youths, ages 10-19. It appeared that near poverty level status vs. non-poverty level status was somewhat predictive of SRD. However, beyond that, little linear relationship was found between socioeconomic status and SRD.

Parental rejection and child abuse have been reported as significantly predictive of those will become documented criminals (McCord, Note 4; New York State Assembly Select Committee on Child Abuse, 1978). On the other hand, findings of this writer are in general agreement with HEW findings (Brennan & Huizinga, 1975) regarding the prepotent relationships between peer pressure, normlessness, negative labeling, and delinquency given normative census tract youth samples. Even though parental rejection and child abuse may be of tremendous etiological significance for a number of identified delinquents, Mauser's conclusion (1974, p. 399) that "a treatment program will be most effective if the delinquent peer group is used as the means of perpetuating the norms and imposing the sanctions of the system " is in very high agreement with the findings presented here. Certainly modeling (Bandura & Walters, 1960) amongst peers would play a powerful role in promoting adherence to prosocial values and norms.

A lack of role access findings with respect to delinquency prediction should not be taken to discount the importance of

the educational experience youth have in relation to their committing antisocial acts. Nor should it be taken as a criticism of attempts to deal with delinquency through the medium of education. Rather, it reflects this writer's belief, based on the self-reports of youth, that for the general youth population, it is the social context and milieu of educational programs delivery which has the greatest bearing on positive youth development. It would be nothing novel to suggest that the positive social atmosphere of an educational program which fosters prosocial norms and more actively involves parents would greatly enhance the effectiveness of a particular program. A study by Graubard (1969) suggests that lower student to teacher ratios allowing for teaching more closely tailored to each student's need would seem to be of benefit. By way of local observation, many of the youth offenders at the Loysville Youth Development Center respond more favorably in the Loysville school than they had elsewhere (Nardella, Note 3). Interviews by this writer have shown that the youths often attribute the change in their performance to the trust the teachers have in them; the individual attention afforded them; the willingness to help offered by the teachers; and the pacing of materials such that the youths (or teachers) do not become frustrated so easily.

Impact Scales as a Clinical Tool

Though norms have been developed for aggregate data and subgroups as well (Brennan and Huizinga, 1975; Truckenmiller, 1979) and are being analyzed further for subgroup profiles by this writer, he would not yet recommend sole reliance on psychometric use of

the Impact Scales for individual clinical cases. A much more fruitful clinical approach is to use the Impact Scale questions in a structured interview format noting the youth's explanations of and elaborations of answers to these questions, as well as the emotional overtones of these answers. One can inquire as to the particular circumstances under which, and the particular people by whom, a youth feels negatively labeled; where and when a youth feels powerless or alienated; the conditions the youth sees as thwarting or augmenting his/her educational and occupational goals; and the particular nature of peer pressure. One can also incorporate information from other sources such as psychological tests; social history; school reports; probation reports; and institutional behavior observations. Thus, the particular experiences of a particular youth can be seen in the light of a general model of youth development.

In the final analysis, concerned judges want answers to two questions: 1) Why did the youth commit the offenses; and 2) What are the conditional prospects for the youth's law-abiding behavior in the future. This writer has found the HEW youth development model to provide an excellent framework with relevant measures for addressing these questions and for making specific recommendations which take into account information on a youth's social relations and anticipations for the future. He is currently engaged in studies on the prediction of specific sorts of youth offenses using the HEW model as a conceptual framework.

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2. Truckenmiller, J. L. Continuing construct validation of the HEW national strategy for youth development model. Paper presented at the XVIIth Inter-American Congress of Psychology, Lima, Peru, July, 1979.

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5. McCord, J., Consideration of the impact of parental behavior on subsequent criminality. Paper presented at the Annual Meeting of the American Sociological Association, Boston, MASS, August 27-31, 1979.

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Footnotes

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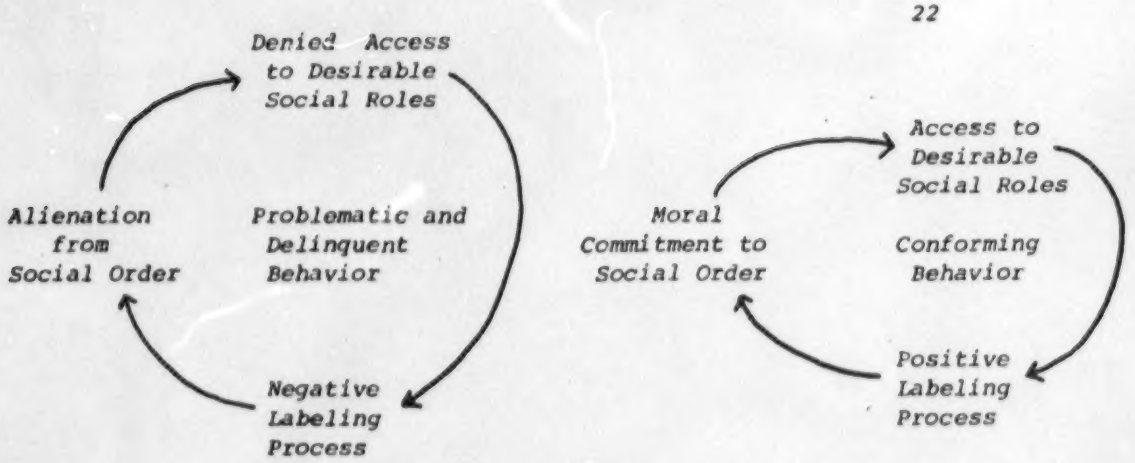
Denied Access to Desirable Social Roles
Alienation from Social Order
Problematic and Delinquent Behavior
Negative Labeling Process
Access to Desirable Social Roles
Moral Commitment to Social Order
Conforming Behavior
Positive Labeling Process

Figure 1 - The synergistic press of variables towards and away from delinquency in the HEW Youth Development Model.

Table 1

Unrotated Factor Loadings (Pattern)

For Maximum Likelihood Canonical Factors

	Factor			
Variable	I	II	III	IV
Normls	.541	.154	.299	-.090
Control	-.571	.425	-.103	-.050
Socest	.495	-.493	.084	-.158
Acced	-.474	.141	.050	.314
Accop	-.376	.272	.035	.253
Labpar	.821	.113	-.224	.156
Labtch	.733	.246	-.140	-.118
Labper	.748	.253	-.164	-.075
SRD	.593	.300	.367	.028
Slfest	-.478	.521	.092	.098
Nrmppr	.609	.209	.290	-.105
Parrej	.621	-.292	.117	.366
$\%s^2$	36.130	9.739	3.735	3.312

Table 1 (cont.)

Note: The variable names in descending order are: Normlessness; Control vs. Powerlessness; Societal Estrangement; Perceived Access to Educational Roles; Perceived Access to Occupational Roles; Perceived Negative Labeling by Parents; Perceived Negative Labeling by Teachers; Perceived Negative Labeling by Peers; Self-Reported Delinquency; Self-esteem; Normative Peer Pressure Towards Delinquency; and Parental Rejection. $\%s^2$ is the percentage of total variance accounted for by each factor.

Table 2

Rotated Factor Loadings (Pattern): Direct Quartimin Oblique Rotation of Maximum Likelihood Canonical Factors

	Factor			
Variable	I	II	III	IV
Normls	-.004	-.078	.614	-.005
Control	-.012	.503	-.133	-.307
Socest	-.115	-.692	.101	.119
Acced	-.156	.474	-.079	.181
Accop	-.037	.524	-.011	.089
Labpar	.855	.004	-.042	.203
Labtch	.673	-.051	.141	-.106
Labper	.729	-.017	.109	-.069
SRD	.055	.121	.748	.074
Slfest	-.095	.664	.153	-.155
Nrmppr	.068	-.057	.645	-.030
Parrej	.198	-.172	.154	.571
$\%s^2$	15.07	14.41	12.23	4.68

Table 2 (cont.)

Note: The variable names in descending order are: Normlessness; Control vs. Powerlessness; Societal Estrangement; Perceived Access to Educational Roles; Perceived Access to Occupational Roles; Perceived Negative Labeling by Parents; Perceived Negative Labeling by Teachers; Perceived Negative Labeling by Peers; Self-Reported Delinquency; Self-esteem; Normative Peer Pressure Towards Delinquency; and Parental Rejection. $\%s^2$ is the percentage of total variance accounted for by each factor.

Table 3

Sorted Rotated Factor Loadings (Pattern):

Direct Quartimin Oblique Rotation of Maximum

Likelihood Canonical Factors

	Factor			
Variable	I	II	III	IV
Labpar	.855	.000	.000	.000
Labper	.729	.000	.000	.000
Labtch	.673	.000	.000	.000
Socest	.000	-.692	.000	.000
Slfest	.000	.664	.000	.000
Accop	.000	.524	.000	.000
Control	.000	.503	.000	-.307
SRD	.000	.000	.748	.000
Nrmppr	.000	.000	.645	.000
Normls	.000	.000	.614	.000
Parrej	.000	.000	.000	.571
Acced	.000	.474	.000	.000
$\%s^2$	15.07	14.41	12.23	4.68

Table 3 (cont.)

Note: The variable names in descending order are: Perceived Negative Labeling by Parents; Perceived Negative Labeling by Peers; Perceived Negative Labeling by Teachers; Societal Estrangement; Self-esteem; Perceived Access to Occupational Roles; Control vs. Powerlessness; Self-Reported Delinquency; Normative Peer Pressure Towards Delinquency; Normlessness; Parental Rejection; and Perceived Access to Educational Roles. $\%s^2$ is the percentage of total variance accounted for by each factor.

The above factor loading matrix has been rearranged so that columns appear in decreasing order of variance explained by factors. The rows have been rearranged so that for each successive factor, loadings greater than .5000 appear first. Loadings less than .2500 have been replaced by zero.

Table 4

Factor Correlations for Rotated Factors

	Factor			
Factor	I	II	III	IV
I	1.000			
II	-.483	1.000		
III	-.690	.369	1.000	
IV	.127	-.278	-.122	1.000

Table 5

Factor Structure (Correlations of Factors with Variables) for the Oblique Rotation

	Factor			
Variable	I	II	III	IV
Normls	.457	-.301	.639	.091
Control	-.385	.644	-.364	-.465
Socest	.303	-.706	.291	.309
Acced	-.416	.528	-.339	.020
Accop	-.287	.522	-.219	-.063
Labpar	.849	-.449	.571	.305
Labtch	.781	-.398	.612	.011
Labper	.803	-.389	.610	.041
SRD	.523	-.202	.751	.139
Slfest	-.329	.696	-.176	-.333
Nrmppr	.537	-.319	.710	.073
Parrej	.460	-.483	.424	.663